

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
9 September 2005 (09.09.2005)

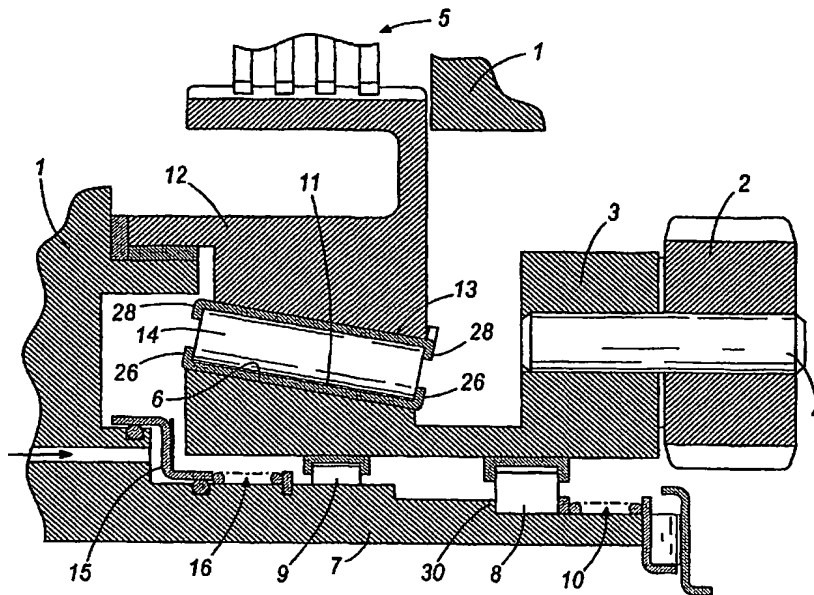
PCT

(10) International Publication Number
WO 2005/083288 A1

- (51) International Patent Classification⁷: **F16D 41/08**, 15/00
- (21) International Application Number: PCT/US2005/005562
- (22) International Filing Date: 22 February 2005 (22.02.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/546,854 23 February 2004 (23.02.2004) US
- (71) Applicant (for all designated States except US): **TIMKEN US CORPORATION** [US/US]; 59 Field Street, Torrington, CT 06790 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **JOKI, Mark, A.** [US/US]; 5930 North American Road, Dover, OH 44622 (US).
- (54) Agent: **MASSINA, Glenn, M.**; Michael Best & Friedrich LLP, 100 East Wisconsin Avenue, Milwaukee, WI 53202-4108 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: **LOW DRAG MULTIMODE CLUTCH**



(57) Abstract: A clutch device comprising a first member, a second member, a race member, and a slipper member. The first member (12) has a first conic surface and the second member (3) has a second conic surface (6) generally opposed to the first conic surface. The race member (13) is fixed to the first conic surface of said first member and the slipper (11) is positioned adjacent the second conic surface of the second member. The race and the slipper members have complementary projections (20, 22) to define pockets into which rollers (14) are arranged. The axial relationship of the first and second members is adjustable to control mating between the slipper (11) and the second conic surface (6) of the second member and thereby enable or prevent torque transmission between the first and second members.

WO 2005/083288 A1



Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.